

No. 673,923.

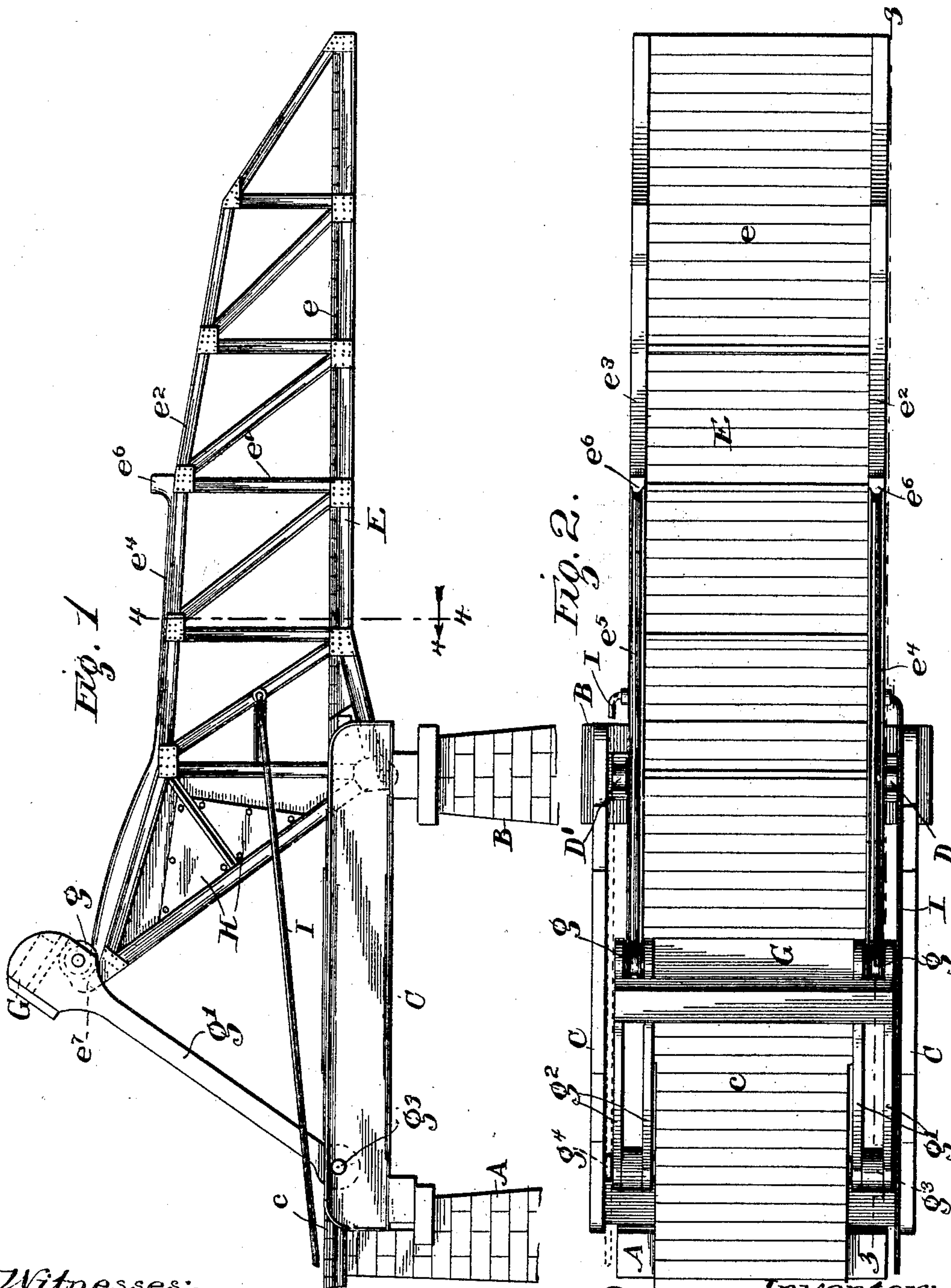
Patented May 14, 1901.

J. W. PAGE.
BASCULE BRIDGE.

(No Model.)

(Application filed May 21, 1900.)

2 Sheets—Sheet 1.



Witnesses:
Chas. O. Sherway,
D. Bliss.

Inventor:
John W. Page
by Hildgum Britton
Atty.

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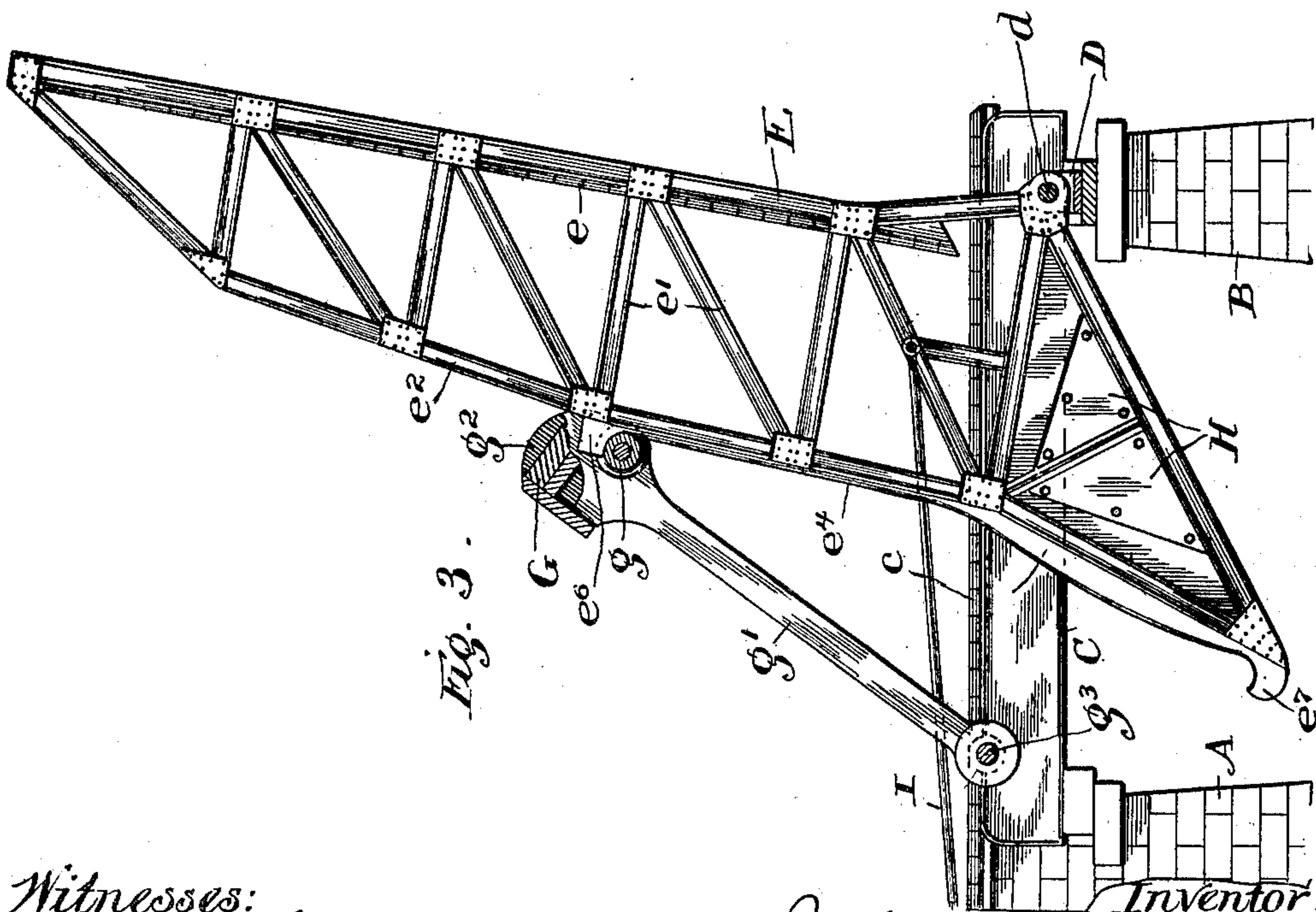
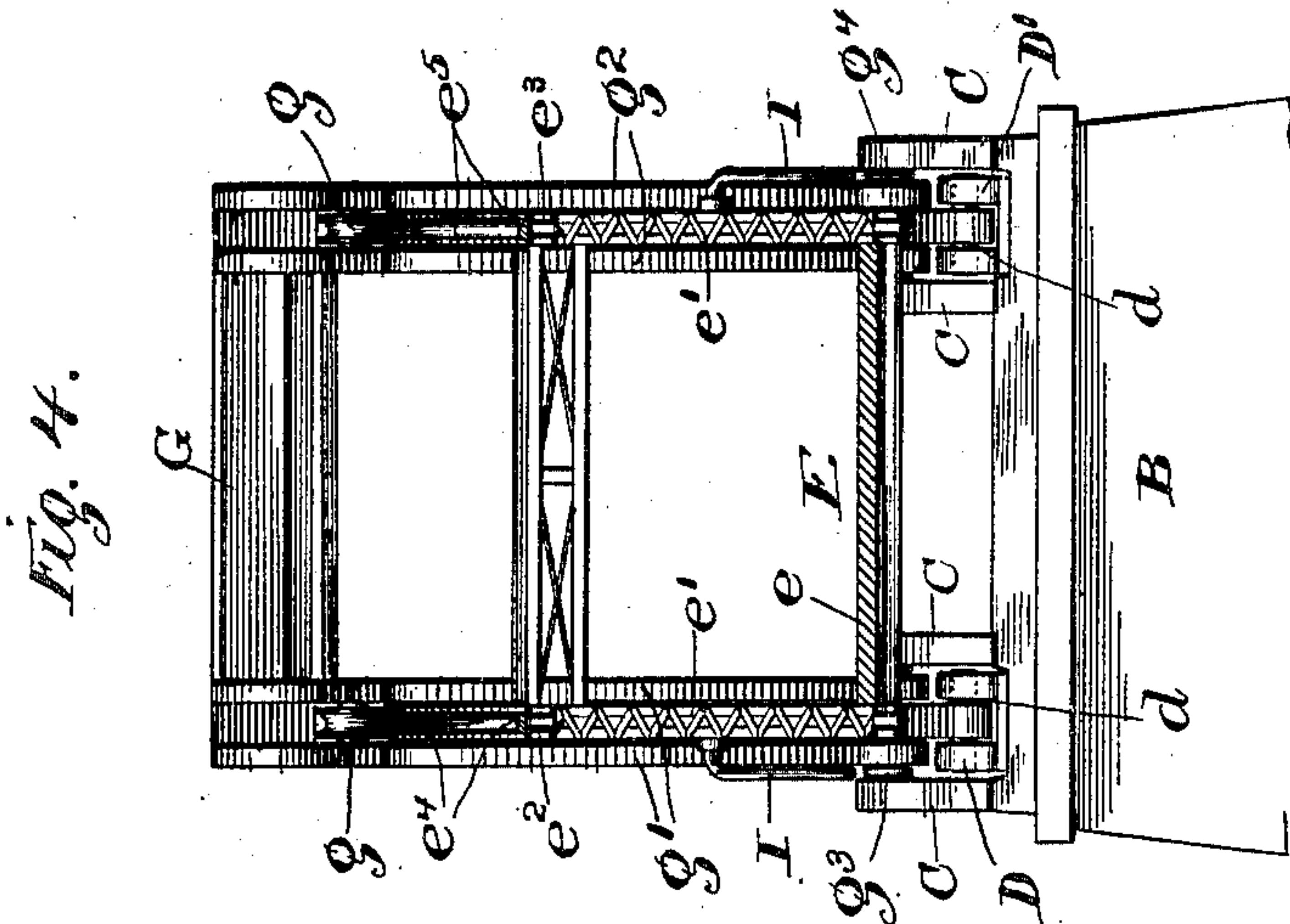
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(Application filed May 21, 1900.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses:

Chas. O. Shervey
S. Bliss.

Inventor.
John W. Page
by Niles, Jr. & Peterson
Attys.

UNITED STATES PATENT OFFICE.

JOHN W. PAGE, OF JOLIET, ILLINOIS.

BASCULE-BRIDGE.

SPECIFICATION forming part of Letters Patent No. 673,923, dated May 14, 1901.

Application filed May 21, 1900. Serial No. 17,376. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. PAGE, a citizen of the United States of America, residing at Joliet, in the county of Will and State of Illinois, have invented certain new and useful Improvements in Basculer-Bridges, of which the following is a specification.

My invention relates to improvements in bascule-bridges, and more particularly to improvements in means for counterbalancing the vertically-swinging members of such bridges, the object of the invention being to effect such counterbalancing by means of weights supported by the oscillating bridge members and adapted to move longitudinally with reference thereto during the movement of oscillation. In bascule-bridges of ordinary construction each vertically-oscillating member has been counterbalanced by extending out in opposite directions from its supporting-pivot, and the result has been that when the bridge proper was lifted to an approximately vertical position the opposite end of the structure necessarily extended downward considerably below the horizontal plane of the pivot. This has rendered it necessary to provide at the outer side of the supporting-abutment of each vertically-oscillating member a dry pit or chamber to receive the counterbalancing end of the oscillating section, and this has necessarily resulted in the narrowing of the channel spanned by the bridge and the cutting down of the cross-section of the waterway.

My improvement contemplates the use of a counterbalancing-weight supported by the oscillating bridge and preferably located above the plane of the bridge-pivot in every position which the bridge can assume, and the swinging section itself may be so constructed that when it is raised to its approximately vertical position its lower end shall extend but very slightly, if at all, below the plane of the bridge-pivot. The consequence is that in the use of my improvement the oscillation of the bridge has no tendency to cut down the space through which the water flows, and a bridge of this construction may therefore be used practically at any height, however slight, above the water-level.

The invention is fully described in this

specification and shown in the accompanying drawings, in which—

Figure 1 is a side elevation of a bascule-bridge having a single oscillating portion, which may rest at its free end upon an abutment or may meet the corresponding end of another similar half to make up a two-part bridge the members of which swing upward and away from each other. Fig. 2 is a plan of the same; Fig. 3, a side elevation, partly in section and showing the bridge raised; and Fig. 4, a vertical section in line 4 4 of Fig. 1 looking in the direction of the arrow 4.

In the views, A B are suitable abutments or piers supporting an approach C, carrying a roadway c. Upon the pier B are pivot-blocks D D', in which are pivoted by means of the pins d the oscillating portion E of the bridge, the same carrying a roadway e and being supported by the side trusses e' e'. The top stringers e² e³ of the truss, which may be extended beyond the pivot at the side opposite the span, are provided with tracks e⁴ e⁵, upon which run rollers g, each carrying an oscillating counterweight G, these weights being at the free ends of levers g' g², pivoted at g³ g⁴ to the approach back of the bridge-pivot. The tracks e⁴ e⁵ are curved to suit the requirements of the counterweights in the various positions of the bridge and preferably terminate at each end with stops e⁶ e⁷, respectively, which limit the oscillation of the bridge in both directions, as shown in Figs. 1 and 3. Counterweights H may be secured to the oscillating portion of the bridge, if desired, and the bridge may be operated by means of struts I, extending to a suitable source of power or by any other suitable means. The purchase and effect of the shifting counterweights are governed by the position of the bridge-pivot with respect to the rollers g g and also by the shape of the tracks upon which these rollers run. The track itself may be varied greatly, and thus adapted to any necessary conditions in the bridge itself.

It should be noticed that in Fig. 1 the tendency of the counterweight G is to assist in lifting the outer end of the bridge, whereas in Fig. 3 it is ready to assist in lowering the same. While the bridge shown in the drawings projects at the rear of the pivot-line,

this is evidently not essential, as the guiding-supports of the shifting counterweights may be so curved as to give the counterweights the desired effect, even though the entire
 5 bridge-section is at one side of the pivot, and in this latter case the raising of the bridge does not bring any portion of it below the plane of the pivot, and therefore cannot im-

10 As shown in the drawings, the guides for the shifting counterweights are along the upper edges of the side trusses of the bridge; but this is evidently not essential, since these guides may be in any suitable relation to the
 15 bridge, provided they properly control the movement of the weights as the bridge oscillates.

I claim as new and desire to secure by Letters Patent—

20 1. The combination with a vertically-oscillating bridge, of a suitably-supported counterweight having a movable bearing upon the bridge and connections independent thereof, adapted to cause relative movement between
 25 said bearing and the bridge during the oscillation of the latter; substantially as described.

30 2. The combination with a bridge oscillating vertically upon a transverse horizontal pivot and bearing a longitudinal track, of a suitably supported and guided counterweight traveling upon said track as the bridge oscillates; substantially as described.

35 3. The combination with a vertically-oscillating bridge, of a weighted lever oscillating vertically upon a suitable pivot and having its free end supported upon said bridge and free to move longitudinally with reference

thereto as the bridge is oscillated; substantially as described. 40

4. The combination, in a bascule-bridge, and with an oscillating span pivoted between its ends, of a counterweight supported by arms pivoted back of the bridge-pivot and provided with rollers running upon the bridge
 45 itself; substantially as described.

5. The combination, in a bascule-bridge, with a vertically-oscillating span pivoted between its ends when in a horizontal position, and provided with suitable side trusses, of
 50 suitable tracks upon said side trusses, a counterweight provided with rollers running upon said tracks and guiding-arms secured to said counterweight and pivoted back of the bridge-pivot in such position with relation thereto as
 55 to cause the line of the thrust of the weight to pass through the bridge-pivot as the bridge swings from a horizontal to a vertical position; substantially as described.

6. The combination, in a bascule-bridge, 60 with a vertically-oscillating span, E, pivoted between its ends at *d*, and a counterweight upon the side opposite the span, of a counterweight running upon a track upon said span and carried by guiding-arms pivoted
 65 back of the bridge-pivot; substantially as described.

In witness whereof I have hereunto set my hand, at Chicago, in the county of Cook and State of Illinois, this 18th day of May, A. D. 70
 1900.

JOHN W. PAGE.

Witnesses:

CHAS. O. SHERVEY,
 S. BLISS.